DALHOUSIE MATHEMATICS COLLOQUIUM

Monday, December 2, 2019; 3:30 pm, Chase 319

Speaker: Scott Rodney (Cape Breton University)

Title: Regularity Estimates for PDE with Data in Non-Standard Spaces

Abstract:

In this talk I present recent joint work with D. Cruz-Uribe. Given a weak super-solution $u \in W_0^{1,2}(\Omega)$ of the elliptic equation

$$-\mathrm{Div}\,(Q(x)\nabla u(x)) = f(x)$$

in a smooth domain Ω of $\mathbb{R}^n$ with f in the Birnbaum-Orlicz space $L^A(\Omega)$ ($A(t) = t^{n/2}\log^\sigma(e+t)$ with $\sigma > n/2$) we show that u satisfies

$$\|u\|_{L^\infty(\Omega)} \leq C\|f\|_{L^A(\Omega)}$$

with C independent of both u and f. This talk will discuss many basic notions in the theory or Birnbaum-Orlicz spaces and is accessible to graduate students.